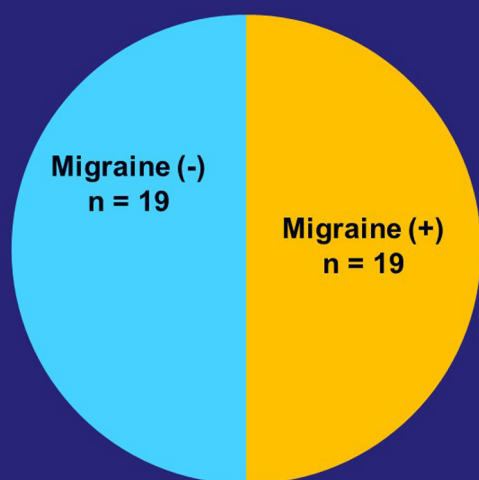
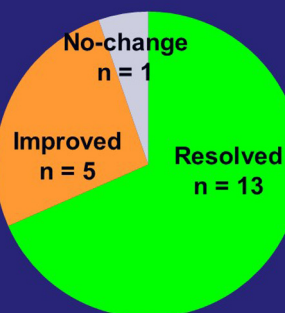


Incidence of Migraine Headache

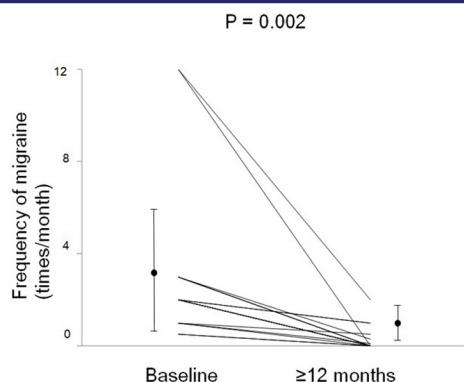


Course of migraine after the procedure (at ≥ 12 months)

Migraine (+) n = 19



Frequency of Migraine (per month)



CONCLUSION Although our data could not demonstrate the therapeutic advantages compare to anticoagulation, this procedure should be considered as one of the medical options for patients with CVE or a migraine.

TCTAP A-077

Intracardiac Ultrasound Assistance Method in ASD Closure Procedure



Igor V. Buzaev,¹ Vladimir V. Plechev,¹ Irina E. Nikolaeva,¹ Inna E. Yamanayeva,¹ Eustaquio M. Onorato,² Vladimir Anatolyevich Surkov³

¹Republican Centre of Cardiovascular Diseases, Bashkir State Medical University, Russian Federation; ²Humanitas Gavazzeni Clinic, Bergamo, Italy; ³GBUZ Republic Heart Centre, Russian Federation

BACKGROUND There are several disadvantages in transthoracic echocardiography such as an insufficient visualization. Transoesophageal echocardiography is an option but has limitations too, such as an impossibility to perform in pediatric cases, diseases of the oesophagus, limits in time, the necessity of narcosis. The aim is to evaluate the benefits of intracardiac echo guidance in closure procedures.

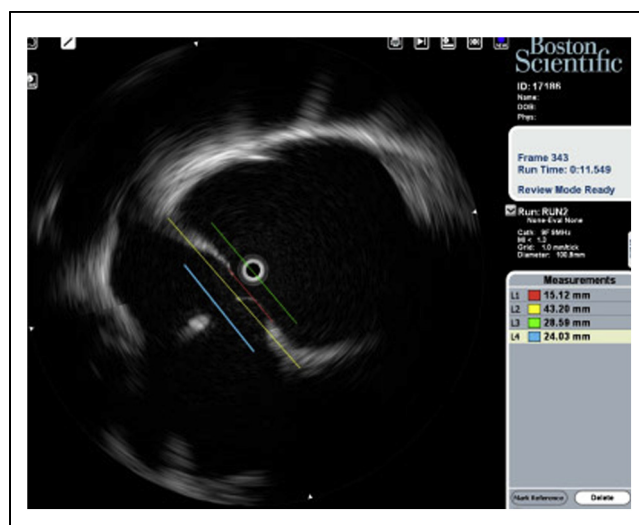
METHODS Procedures were performed in the Philips Allura cathlab with a local or general anaesthesia, depending on age. To perform an intracardiac ultrasound guidance we used the iLab device by Boston Scientific and the "ULTRA-ICE" probe in 29 patients, including 4 males. The average age was 14.6 ± 9.6 years old.

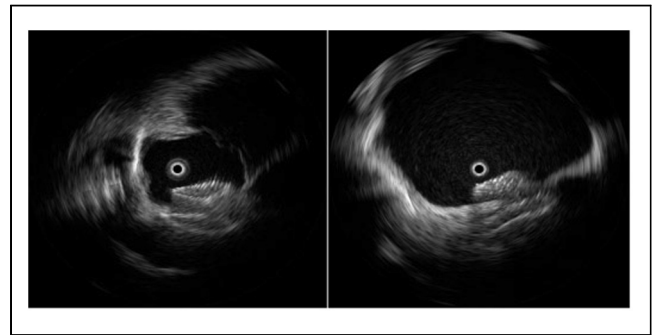
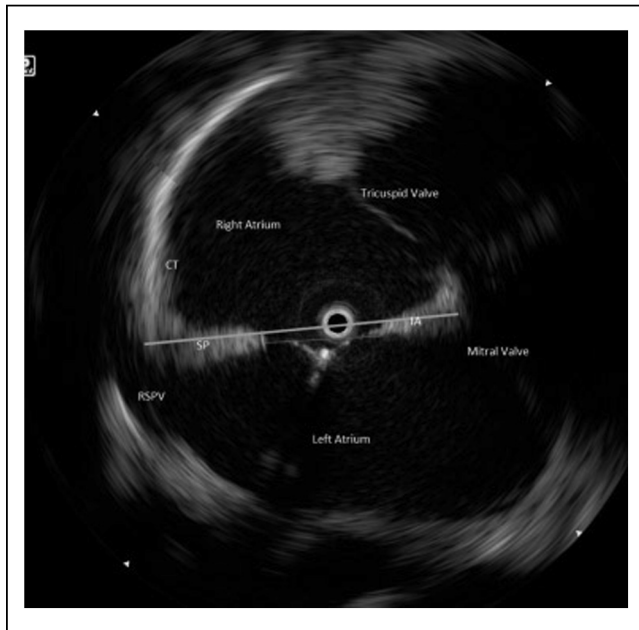
Two planes of the fossa ovalis are necessary to select the appropriate occluder device. The first plane was taken when the probe enters the superior vena cava and was directed down manually, scanning the cardiac structure. The optimal movement speed is 0.2-0.5 cm per second. Most cardiac structures, including valves, can be analyzed in the axial views: great vessels, superior vena cava, right atrium, aortic valve, cavotricuspid isthmus. Two specific landmarks are; 1) the crista terminalis, a thick structure located at the junction between the posterior smooth part and the anterolateral trabeculated portion of the RA; 2) the right atrial appendage which is a nose-like structure.

The second plane, the long-axis view, was obtained with a 55° precurved introducer sheath advanced up to the septal defect and turned posterior and leftward, to longitudinally scan the atrial septum. On this plane, it is possible to visualise the both atria, both atrial auricles, tricuspid and mitral valves. Moreover, the atrial septum is longitudinally scanned and the fossa ovalis with its inferior-anterior and superior-posterior rims can be well estimated.

The systolic and diastolic longitudinal atrial septal diameters, the dimensions of the defect and the fossa ovalis, the fossa ovalis distances to the inlet of the inferior vena cava (posteroinferior rim) as well as the coronary sinus or atrioventricular junction (anteroinferior rim) have been measured accurately. The occluder size can be calculated by Onorato formula, where a size of the device is a square root of multiplied two "muscular to muscular" defect sizes in planes defined above. Device sizes were 9 to 24 mm with mean 17.9 ± 6.1 .

The iLab internal software allows adjusting virtually occluder size to the septum. After this check was performed the final stage of the occluder.





CONCLUSION Intracardiac guidance has benefits such as; 1. Appropriate selection of the device type and size and possible without balloon sizing; 2. Optimal monitoring of device deployment, because of its ability to provide 360° view from inside; 3. The procedure can be performed with local anaesthesia with minimum patient's discomfort for a relatively prolonged time period; 4. It is easy to use the technique by the single interventional cardiologist, who have a possibility to perform the closure the ASD and navigation by himself; 5. The learning curve is 15 procedures.

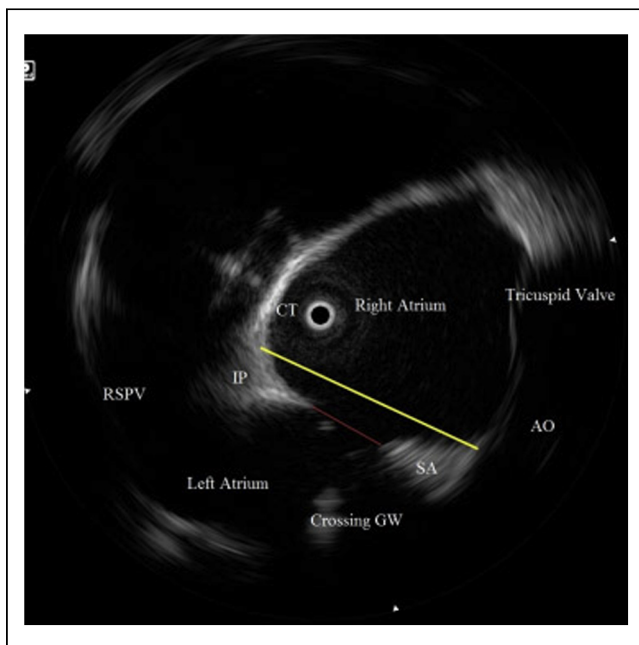
TCTAP A-078

Percutaneous Closure of Interatrial Septal Abnormalities (Patent Foramen Ovale and Atrial Septal Defect) for Prevention of Paradoxical Embolism



Qiang Fu,¹ Caixia Guo,¹ Buxing Chen¹

¹Department of Cardiology, Beijing Tiantan Hospital, Capital Medical University, China



RESULTS No complications occurred in the early postoperative period. Patients were in good clinical conditions and 6 months follow-up showed the absence of residual shunting through the atrial septum in most all cases. One patient with multiple defects had 4 mm residual shunt. No major complications (death, device embolization or need for surgery) occurred.

BACKGROUND Interatrial septal abnormalities, specifically patent foramen ovale (PFO), atrial septal defect (ASD), and atrial septal aneurysm (ASA) has been correlated with cryptogenic stroke and migraine contributed to paradoxical embolism. Although previous studies have shown that percutaneous PFO or ASD closure reduces the risk of stroke and improves a migraine, effective closure rate depends on residual shunting which may be associated with poor neurologic events. Therefore, the aim of the study was to evaluate effective transcatheter PFO or ASD closure rate and clinical outcome.

METHODS All patients who underwent percutaneous PFO or ASD closure at Beijing Tiantan Hospital between May 2015 and September 2016 were enrolled. Right-to-left shunts (RLS) were confirmed by contrast transcranial doppler (cTCD) before transcatheter closure. At 1 and 6 months after the closure, cTCD was performed to detect any residual shunt at rest and after aValsalva maneuver. A success rate of device implantation, effective closure rate, complications and recurrent neurologic events were evaluated.

RESULTS A total of 40 patients (45 ± 13 years, 50% male, 35 PFO and 5 ASD) were included in the study. Thirty-two patients had a cryptogenic stroke and 8 patients had a migraine. ASA was documented in 1 patient. Before closure, severe RLS were found in 33 (82.5%) patients. All patients underwent successful device closure without complication. Cardio-O-Fix PFO Occluder was used in PFO patients and ASD Occluder was implanted in ASD patients. At 1 month of follow-up, 3 patients (7.5%) had documented moderate residual RLS and completed closure rate was 92.5%. At 6 months, 25 patients finished follow-up. Of these, moderate residual RLS was present in 1 PFO patient (4%) with an ASA and thus completed closure rate was 96%. During 6 months of follow-up, no recurrent neurological events were observed.